

In the Claims:

Please cancel Claims 11-13, 15, 16, 18-22, 24, 25, 41, and 42 without prejudice.

A complete copy of the claims as amended appears below.

1 1. (Previously Presented) A solid state laser gain medium having first and second
2 ends along a laser optical axis in which at least one end is profiled to provide a level of
3 thermal lensing at a predetermined operating power, in which the predetermined beam
4 quality is centered substantially on a maximum at the predetermined operating pump
5 power.

1 2. (Previously Presented) A solid state laser gain medium as defined in Claim 1, in
2 which both ends of the solid state laser gain medium are profiled.

1 3. (Previously Presented) A solid state laser gain medium as defined in Claim 1, in
2 which the solid state laser gain medium is formed of Nd:YAG.

1 4. (Previously Presented) A laser oscillator cavity including a solid state laser gain
2 medium as defined in Claim 1.

1 5. (Previously Presented) A laser oscillator cavity as defined in Claim 4, further
2 comprising:
3 flat cavity end reflectors.

1 6. (Previously Presented) A laser oscillator cavity as defined in Claim 4, further
2 comprising:

3 a Q-switch having first and second acousto-optic cells and respective first and
4 second non-parallel polarization orientations.

1 7. (Previously Presented) A laser oscillator cavity as defined in Claim 4, further
2 including a Q-switch comprising:

3 at least one acousto-optic cell having a reflective end forming a cavity end
4 reflector.

1 8. (Previously Presented) A laser oscillator cavity as defined in Claim 4, further
2 comprising

3 a frequency converter; and

4 a frequency selective reflector between the solid state laser gain medium and the
5 frequency converter.

1 9. (Previously Presented) A laser including a solid state laser gain medium as defined
2 in Claim 1.

1 10. (Previously Presented) A laser as defined in Claim 9, further comprising:

2 a side-pumping diode element.

11-22. (Cancelled).

1 23. (Previously Presented) A laser ablation device comprising a laser as defined in
2 Claim 9.

24-25. (Cancelled).

1 26. (Previously Presented) A laser amplifier having:
2 a laser cavity; and
3 an amplifying module external to the laser cavity, said amplifying module sharing
4 a common axis of emission with said laser cavity and comprising a gain medium having
5 first and second ends along said axis of emission;
6 whereby at least one of said first or second ends is profiled so as to directly couple light
7 from said laser cavity into said amplifying module.

1 27. (Previously Presented) A laser amplifier as defined in Claim 26, wherein one or
2 both of said first and second ends are profiled to form a lens having a predetermined focal
3 length.

1 28. (Previously Presented) A laser amplifier as defined in Claim 26, wherein said laser
2 comprises a gain medium with profiled ends.

1 29. (Previously Presented) A laser amplifier as defined in Claim 27, in which the lens
2 is one of a refractive lens, a diffractive lens, or a GRIN lens.

1 30. (Previously Presented) A laser amplifier as defined in Claim 27, wherein said laser
2 gain medium ends are profiled to form a lens having a predetermined focal length.

1 31. (Previously Presented) A laser amplifier as defined in Claim 30, wherein said lens
2 of said laser gain medium and said lens of amplifier gain medium have substantially
3 equal focal lengths.

1 32. (Previously Presented) A laser amplifier as defined in Claim 30, whereby said
2 laser gain medium lens and said amplifier gain medium lens are concavely profiled.

1 33. (Previously Presented) A laser amplifier as defined in Claim 26, wherein said laser
2 and said amplifying medium are pumped simultaneously.

1 34. (Previously Presented) A laser amplifier as defined in Claim 33, wherein said laser
2 pump and said amplifying pump have equal power.

1 35. (Previously Presented) A laser amplifier as defined in Claim 26, in which an input
2 surface to the amplifier is tilted.

1 36. (Previously Presented) An optical amplifier module comprising:
2 a medium having first and second ends, at least one end being profiled to provide a
3 level of lensing at a predetermined operating power, arranged such that, in use, the
4 amplifier can be directly coupled to a laser of predetermined parameters.

1 37. (Previously Presented) A module as defined in Claim 33, in which, for an
2 amplifier medium comprising a rod of diameter D_R , length L_R , refractive index n_L ,
3 refractive index of air n_{air} , and thermal focal length f_{th} arranged to receive an input beam
4 from a laser having waist distance d_0 from the input rod end, the rod is profiled with a
5 radius of curvature R given approximately by $R = \frac{d_0(4f_{th} - L_R)(n_L - n_{air})}{n_L(4f_{th} - L_R - 2d_0)}$.

1 38. (Previously Presented) A method of making a laser amplifier module gain medium
2 comprising:
3 profiling at least one end thereof to provide a level of lensing at a predetermined
4 operating power, arranged such that, in use, the amplifier can be directly coupled to a
5 laser of predetermined parameters.

1 39. (Previously Presented) A method of designing a laser amplifier comprising
2 identifying a profile as defined in Claim 34.

40-42. (Cancelled).

- 1 43. (Previously Presented) A laser assembly comprising a gain medium as defined in
- 2 Claim 1 and an amplifier as defined in Claim 26 coupled therewith.